

The initial expressions of $U_5(\gamma * \xi^i)$ for $0 \leq i \leq 4$. Here $\text{UofGammaXi}[i]$ denotes $U_5(\gamma * \xi^i)$.

$$\begin{aligned}
 \text{UofGammaXi}[0] &= \xi - 5 \xi^2 + 5 \xi^3; \\
 \text{UofGammaXi}[1] &= -3 \xi + 79 \xi^2 - 675 \xi^3 + 2850 \xi^4 - 7250 \xi^5 + 11250 \xi^6 - 9375 \xi^7 + 3125 \xi^8; \\
 \text{UofGammaXi}[2] &= \xi - 225 \xi^2 + 5725 \xi^3 - 64875 \xi^4 + 434375 \xi^5 - 1946875 \xi^6 + 6181250 \xi^7 - \\
 &\quad 14218750 \xi^8 + 23671875 \xi^9 - 27734375 \xi^{10} + 21484375 \xi^{11} - 9765625 \xi^{12} + 1953125 \xi^{13}; \\
 \text{UofGammaXi}[3] &= 266 \xi^2 - 18165 \xi^3 + 438775 \xi^4 - 5793375 \xi^5 + 49756875 \xi^6 - \\
 &\quad 304193750 \xi^7 + 1393481250 \xi^8 - 4928984375 \xi^9 + 13685546875 \xi^{10} - \\
 &\quad 30013671875 \xi^{11} + 51851953125 \xi^{12} - 69726562500 \xi^{13} + 71298828125 \xi^{14} - \\
 &\quad 53320312500 \xi^{15} + 27343750000 \xi^{16} - 8544921875 \xi^{17} + 1220703125 \xi^{18}; \\
 \text{UofGammaXi}[4] &= -174 \xi^2 + 31275 \xi^3 - 1489725 \xi^4 + 34901125 \xi^5 - 505783125 \xi^6 + \\
 &\quad 5092031250 \xi^7 - 38116096875 \xi^8 + 221429531250 \xi^9 - 1026822656250 \xi^{10} + \\
 &\quad 3872170781250 \xi^{11} - 12015087890625 \xi^{12} + 30877207031250 \xi^{13} - \\
 &\quad 65850722656250 \xi^{14} + 116285888671875 \xi^{15} - 168908203125000 \xi^{16} + \\
 &\quad 199452392578125 \xi^{17} - 188031005859375 \xi^{18} + 137768554687500 \xi^{19} - \\
 &\quad 75347900390625 \xi^{20} + 28839111328125 \xi^{21} - 6866455078125 \xi^{22} + 762939453125 \xi^{23};
 \end{aligned}$$